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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TAYLOR, NICHOLAS R

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2441

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/721,639	Applicant(s) JENSEN ET AL.	
	Examiner Nicholas Taylor	Art Unit 2441	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-22 have been presented for examination and are rejected.
2. The proposed amendments to the specification filed on July 24th, 2009, are approved.

Response to Arguments

3. Applicant's arguments filed July 24th, 2009, have been fully considered but they are deemed not persuasive.
4. In the remarks, applicant argued in substance that:

(A) The prior art of Garland does not teach or suggest a plurality of navigation subsystem to imaging subsystem messages. Instead, Garland merely discloses patient record terminals that are primarily used to display a plurality of patient records.

As to point (A), Garland discloses a method for communication in a bi-directional diagnostic imaging system between a medical imaging subsystem and a medical navigational subsystem where messages are sent between the imaging and navigation subsystems (see paragraphs 0035-0040 and figs. 1 and 2). Garland's imaging system, for example, may use a variety of imaging modalities including computed tomography,

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magnetic resonance, or ultrasound imaging to enable the imaging subsystem (paragraph 0040). Garland further provides a navigation subsystem that is capable of communicating with the imaging system via messaging (see, e.g., paragraphs 0041-0042 where a user can navigate the images acquired by the device). Additionally, Simon similarly discloses navigation subsystems, imaging subsystems, and communication messages therein (see, e.g., col. 8, line 30 to col. 9, line 50). As to the arguments that patient records and other data are also available in Garland's system through the use of integrated linking systems (e.g., paragraphs 0060-0061), the additional functionality of including relevant patient record data does not preclude teaching the claimed limitations of imaging and navigation subsystems.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garland et al. (U.S. PGPub 2002/0023067) and Simon et al. (U.S. Patent 6,470,207).

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

As per claim 1 and 14, Garland teaches a method for communication in a bi-directional diagnostic imaging system between a medical imaging subsystem and a medical navigational subsystem, the method comprising: (Garland, see paragraphs 0035-0040 and figs. 1 and 2)

realizing in a navigation subsystem a plurality of navigation subsystem to imaging subsystem messages; (Garland, see paragraphs 0035-0040 and figs. 1 and 2)

realizing in the imaging subsystem a Begin Imaging and an End Imaging message for synchronizing image acquisition with navigation coordinate determination, the Begin Imaging and End Imaging messages included in imaging subsystem to navigation subsystem messages; and formatting the End Imaging message according to a predetermined message header format common to a plurality of the navigation subsystem to imaging subsystem messages and the imaging subsystem to navigation subsystem messages; and (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used)

transmitting the End Imaging message from the imaging subsystem to the navigation subsystem (Garland, see paragraphs 0035-0040 and figs. 1 and 2).

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However, Garland is silent as to combining navigation coordinate determination with the image acquisition process.

Simon teaches a fluoroscopic imaging system that synchronizes image acquisition with navigation coordinate determination in a networked imaging system (see fig. 1, fig. 4, and col. 8, line 47 to col. 9, line 50).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Garland and Simon to provide the system of Simon in the system of Garland because doing so would provide an imaging system that enhances traditional surgical navigation techniques by providing navigational imaging guidance while performing surgery (Simon, see col. 1, lines 19-46).

As per claims 2 and 20, Garland-Simon teaches the system further comprising transmitting a magnification mode message specifying a magnification mode of an X-ray detector (Garland, see paragraphs 0077, 0089, and fig. 5c).

As per claim 3, Garland-Simon teaches the system further wherein the magnification mode specifies one of a 12 inch, 9 inch, and 6 inch magnification mode for a 12 inch image intensifier or one of a 9 inch, 6 inch, and 4.5 inch magnification mode for a 9 inch image intensifier (Garland, see paragraphs 0077, 0089, and fig. 5c).

As per claim 4, Garland-Simon teaches the system further wherein the navigation subsystem to imaging subsystem messages include an image request message, the

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imaging subsystem to navigation subsystem messages include an image reply message, and the image reply message comprises image width, image height, and pixel data (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 5, Garland-Simon teaches the system further wherein the image reply message further comprises bytes-per-pixel, field of view, and image rotation (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 6, Garland-Simon teaches the system further wherein at least one of the navigation subsystem to imaging subsystem messages and the imaging subsystem to navigation subsystem messages include a Ping response time message (Garland, paragraphs 0035-0054, 0056, and 0059).

As per claim 7, Garland-Simon teaches the system further wherein the navigation subsystem to imaging subsystem messages include a system configuration request message (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 8, Garland-Simon teaches the system further wherein the imaging subsystem to navigation subsystem messages include a system configuration reply

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message (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 9, Garland-Simon teaches the system further wherein the system configuration reply message comprises a system model and software revision (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 10, Garland-Simon teaches the system further wherein the navigation subsystem to imaging subsystem messages include a file request message specifying a filename to transfer (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 11, Garland-Simon teaches the system further wherein the imaging subsystem to navigation subsystem messages include a file reply message with responsive data from a file identified by the filename (Garland, see paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 12, Garland-Simon teaches the system further wherein the imaging subsystem to navigation subsystem messages include a patient information message specifying at least patient name, sex, and patient ID (Garland, see, e.g., fig. 5A).

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As per claim 13, Garland-Simon teaches the system further wherein the imaging subsystem to navigation subsystem messages include a navigation subsystem network address selection message (Garland, see paragraphs 0035-0040 and figs. 1 and 2).

As per claim 15, Garland-Simon teaches the system further wherein transmitting comprises transmitting over a high speed network connection (Garland, paragraph 0035).

As per claim 16, Garland-Simon teaches the system further wherein transmitting comprises transmitting over an Ethernet network connection (Garland, paragraph 0035).

As per claim 17, Garland-Simon teaches the system further wherein transmitting comprises transmitting according to the TCP/IP protocol (Garland, see paragraphs 0056 and 0059).

As per claim 18, Garland-Simon teaches the system further comprising:

formatting an image request message according to the predetermined message header format; transmitting the image request message from the imaging subsystem to the navigation subsystem; formatting an image reply message according to the predetermined message header format; and transmitting the image reply message with image data from the imaging subsystem to the navigation subsystem (Garland, see

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paragraphs 0012, 0055, 0056, 0059, and 0065, where the DICOM 3.0 standard is used).

As per claim 19, Garland-Simon teaches the system further wherein transmitting comprises transmitting across a private network between the navigation subsystem and the imaging subsystem (Garland, see paragraphs 0035-0040 and figs. 1 and 2).

As per claims 21 and 22, Garland-Simon teaches the system further wherein the navigation subsystem comprises an electromagnetic navigation subsystem that tracks a medical instrument with respect to a patient in a surgical environment (Simon, see col. 8, line 30 to col. 9, line 50).

Conclusion

8. Applicant's amendment necessitated any new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas Taylor whose telephone number is (571) 272-3889. The examiner can normally be reached on Monday-Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/NT/
Nicholas Taylor
Examiner
Art Unit 2441

/Larry Donaghue/
Primary Examiner, Art Unit 2454